|  |  |  |  |
| --- | --- | --- | --- |
| **Cartilage Type** | **Morphology** | **Function** | **COMMON LOCATIONS** |
| **Hyaline** | **CELLS** |  |  |
| **GROUND SUBSTANCE** |
| **EXTRACELLULAR FIBERS** |
| **Fibrocartilage** | **CELLS** |  |  |
| **GROUND STUBSTANCE** |
| **EXTRACELLULAR FIBERS** |
| **Elastic** | **CELLS** |  |  |
| **GROUND SUBSTANCE** |
| **EXTRACELLULAR FIBERS** |

|  |  |  |
| --- | --- | --- |
| **CARTILAGE TYPE** | **ECM FIBERS (MOST PREVALENT)** | **STAIN/APPEARANCE** |
| **HYALINE** |  |  |
| **ELASTIC** |  |  |
| **FIBROCARTILAGE** |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **PERICHONDRIUM LAYER** | **COMPOSITION** | **FUNCTION** | **LOCATION** |
| **Fibrous** |  |  |  |
| **Chondrogenic** |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Matrix** | **Location** | **Staining** | **Other** |
| ***Territorial (capsular) matrix*** |  |  |  |
| ***Interterritorial matrix*** |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Ground Substance Component** | **Structural Components** | **Function** |
| **PROTEOGLYCANS** | 1. ***Proteoglycan subunit*** |  |
| 1. ***Proteoglycan aggregates*** | 1. **Diffusion of nutrients** 2. **Resists compression** 3. **Slippery** |
| **GLYCOPROTEINS** | 1. ***Chondronectin*** |  |
| 1. ***Chondrocalcin*** |  |

|  |  |  |
| --- | --- | --- |
| **REGION** | **STRUCTURE** | **FUNCTION** |
| 1. **Surface cartilage** |  |  |
| 1. **Calcified cartilage** |  |  |
| 1. **Subchondral bone** |  |  |

**Two methods of rapid cartilage growth:**

|  |  |  |
| --- | --- | --- |
| **MODE OF GROWTH** | **GROWTH…** | **TISSUE IS ADDED…** |
| ***Interstitial growth*** | From within | From the inside of the tissue |
| ***Appositional growth*** | On outside of tissue proper | On the outer surface of the tissue  (done by perichondrium) |

**Joint Cartilage Repair**

**Requirements for Repair:**

**Degree of Damage:**

**Repair Tissue:**

**Other Forms of Repair:**

**Diseases/Problems:**

|  |  |
| --- | --- |
| **OSTEOARTHRITIS (most common)** | **RHEUMATOID ARTHRITIS** |
| ***Non-inflammatory*** | ***Inflammatory autoimmune disease*** |
| **A ffects synovial joints** | **Primarily inflammation of synovial membrane** |
| **Progressive deterioration of articular cartilage** | **Cartilage erosion and bone fusion** |